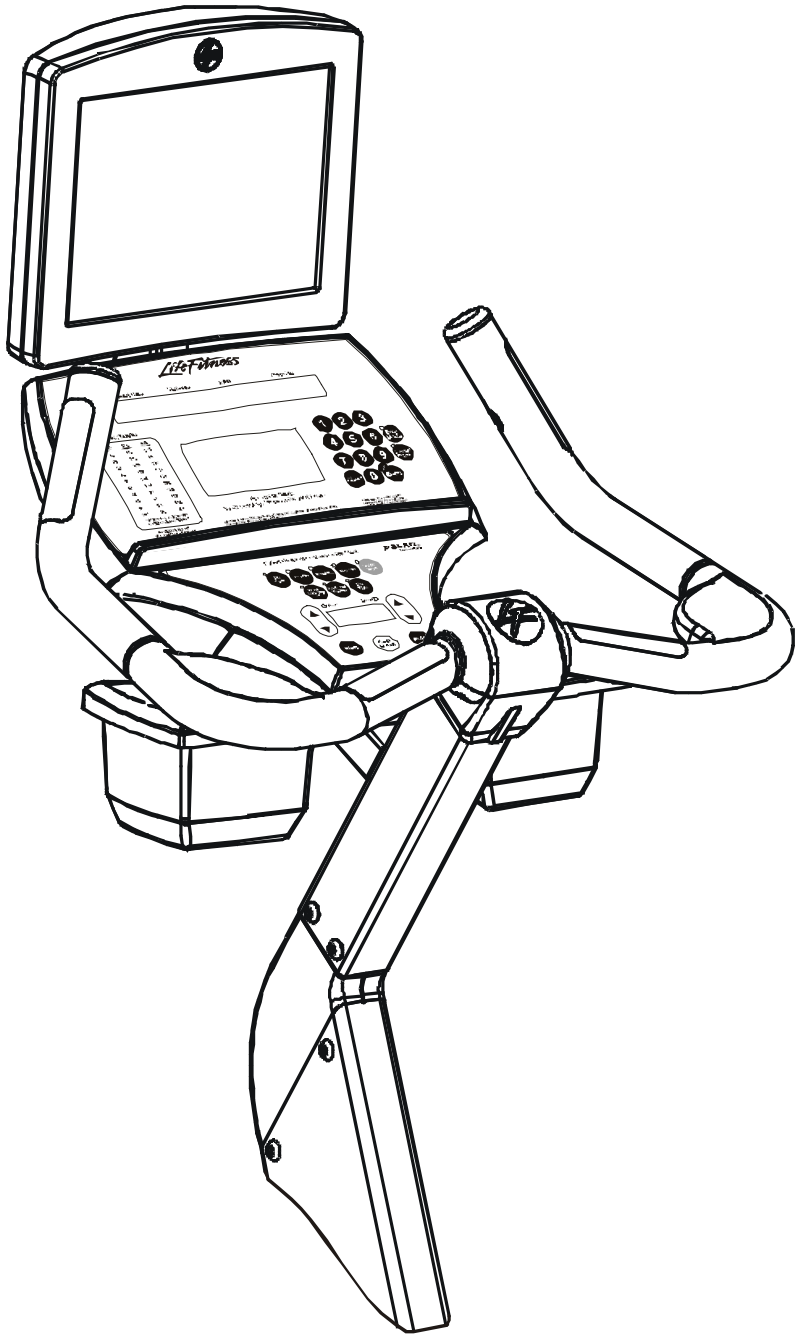
LifeFitness

Life Fitness LCD Entertainment System



Customer Support Services

SERVICE MANUAL

INTRODUCTION

HOW TO USE SERVICE MANUAL AND CONTACT CUSTOMER SUPPORT SERVICES

This service manual is applicable to Life Fitness LCD Entertainment System. Illustrations in this service manual represent typical configurations and may differ slightly from actual equipment. The Service Manual provides safe and efficient step-by-step service operations. This manual consists of:

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Section I
- ❑ TROUBLESHOOTING

Section II
- ❑ HOW TO...SERVICE AND REPAIR

Section III
- ❑ ELECTRONICS

Section IV
- ❑ MISCELLANEOUS

When an operating problem occurs, refer to troubleshooting guides to isolate the cause. When applicable, guides are listed by problem symptom followed with suggestions of probable cause(s).

Once the source of problem is identified, consult the "How To..." guides for recommended repair procedures. "How To..." sub-sections are organized by replaceable part or assembly name. For convenience, sub-section lists recommended “Tools Required” to complete specific function. Refer to PARTS IDENTIFICATION to identify proper name and number of part to order for repair of equipment.

A reproducible FAX order claim form is given in COMMUNICATING BY TELEFACSIMILE for convenient ordering of service parts.

To order parts, contact Life Fitness Customer Support Services.
Via FAX - 24 hrs. /day, 7 days/week.
Via telephone - Monday through Friday from 8:00 AM to 5:00 PM Central Standard Time.
Via post - At address cited.

To speed Life Fitness Customer Support Services response to your needs, please provide:

- Model number,
- Serial number,
- Symptom, and
- Part name and number

Before installing part, review "How To..." and follow step by step procedures recommended to install part safely and efficiently. If you have questions or comments please telephone, FAX or, write us. We are:

LIFE FITNESS - CUSTOMER SUPPORT SERVICES
10601 Belmont Avenue; Franklin Park, IL 60131; U.S.A.
Telephone: 847.451.0036 Toll-free: 800.351.3737
FAX: 847.288.3702 Toll-free: 800.216.8893

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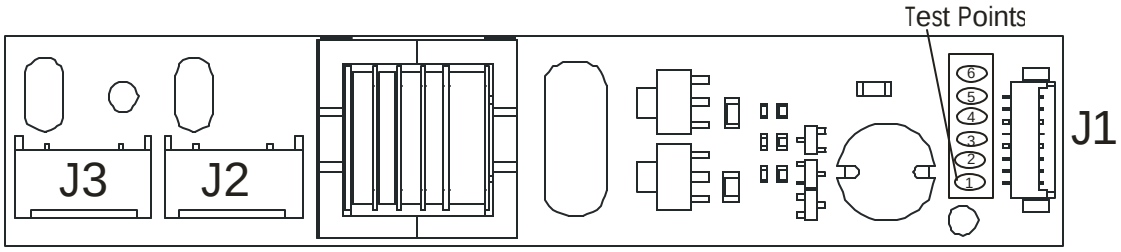
How To...Test the Inverter Board

Special Service Tools Required: Multi-meter



1. Remove the Entertainment System Console from the Unit.
2. Remove Rear Cover from the Console Assembly.
3. Plug in Power Supply and Remote Control to the Console
4. Press the Power On Key on the Remote Control.
5. TEST NO. 1: Place the Red Lead from the multi-meter onto Test Point 1 and the Black Lead onto Test Point 3. Voltage should be 12 Vdc (+/- .5V).
6. TEST NO. 2: Place the Red Lead from the multi-meter onto Test Point 5 and the Black Lead to Test Point 3. Voltage should be 12 Vdc (+/- .5V)

PROBLEM	SOLUTION
No Voltage on TP1	Replace Cable, Remote, or Main PC Board.
Voltage present on TP1	Replace the Inverter Board
Voltage on TP1 and TP2 but NO Voltage on TP5	Replace Cable between Inverter Board and Main PC Board

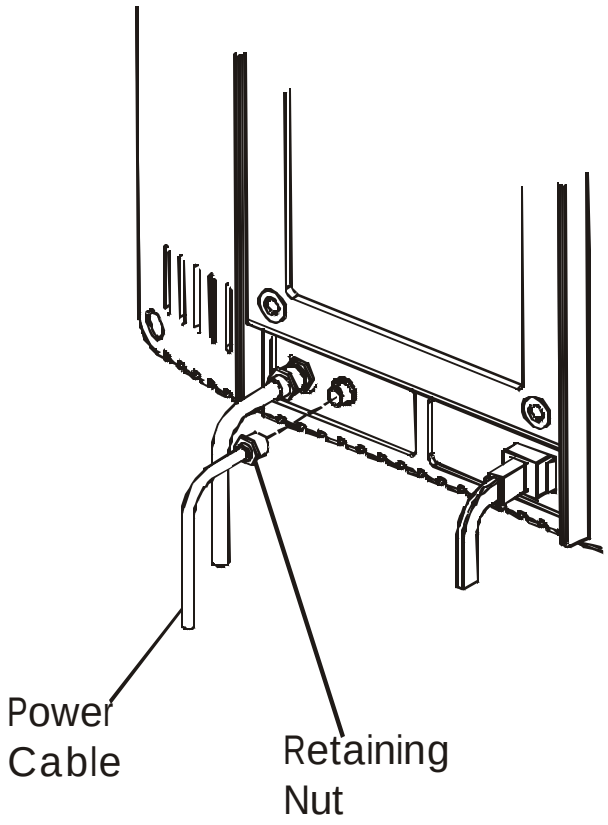
TEST POINT	VOLTAGE	DESCRIPTION	PIN NUMBER
TP 1 & 2	12 Vdc	VIN	1 & 2
TP 3 &4	0 Vdc	Ground	3 & 4
5	12 Vdc	Enable	5
5	0 Vdc	Disable	5
6	Not Used	Not Used	6/7/8

Life Fitness LCD Entertainment System

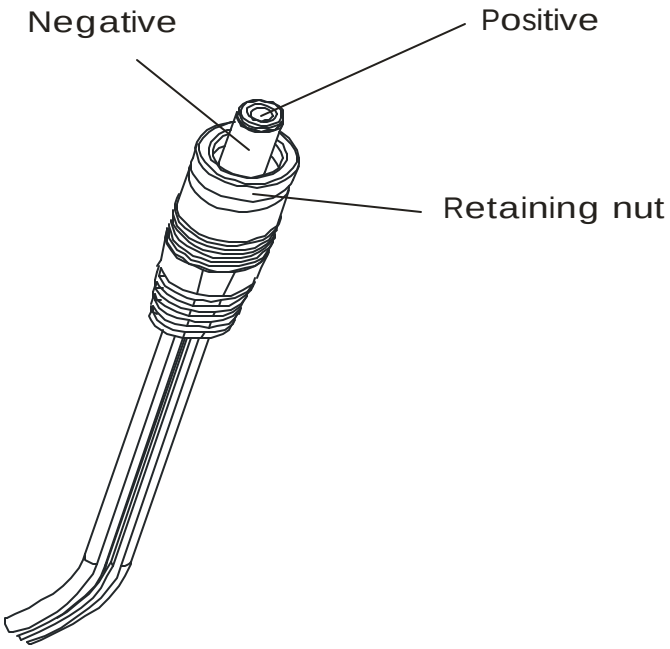
How To...Test the Power Supply

Special Service Tools Required: Multi-meter

1. Unscrew the Retaining Nut securing the Power Cable Plug at the back of the Console Assembly and remove the Cable from the Console.



2. Using a Multi-meter, touch the Red Lead to the POSITIVE area on the Cable, which is the center of the cable. Next touch the Black Lead to the NEGATIVE area, which is the side of the inner Cable. The voltage should read 12 Vdc.



NOTES

SECTION II

HOW TO…
SERVICE AND REPAIR GUIDE

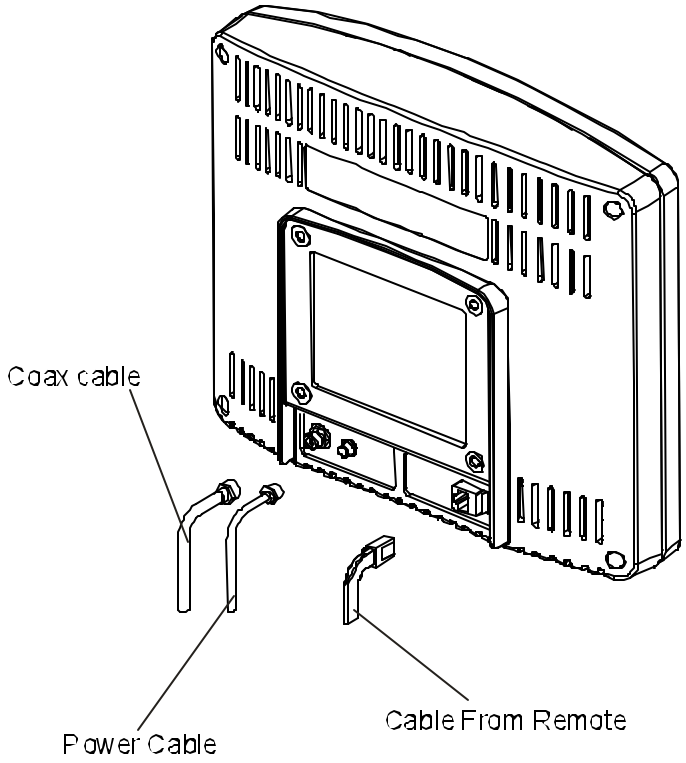
NOTES

Life Fitness LCD Entertainment System

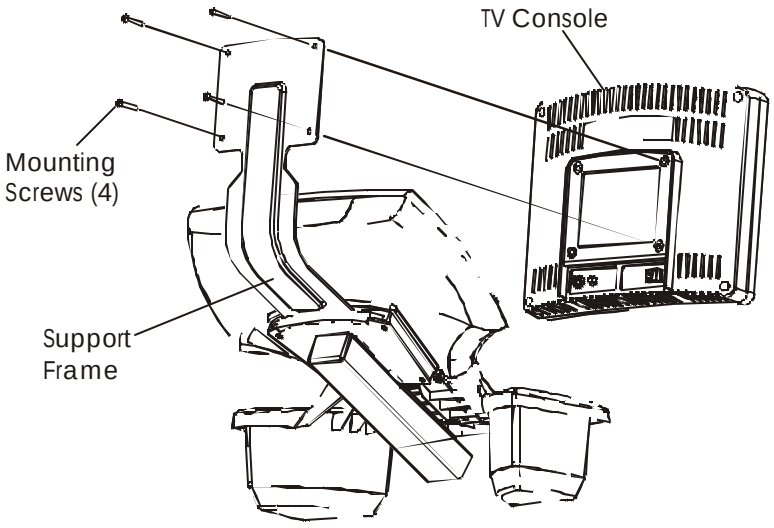
How To Replace the TV Assembly

Special Service Tools Required: NONE

1. Disconnect three cables from the back of the Console. Both the Power Cable and the Coax Cable are screw on connectors. The Cable from the Remote uses a connector that clips into the receptacle connector.



2. Remove the four screws securing the TV Console to the Support Frame.
3. Remove the TV Console Assembly.
4. Install a new TV Console Assembly in reverse order.
5. For channel reprogramming refer to Operation Manual.



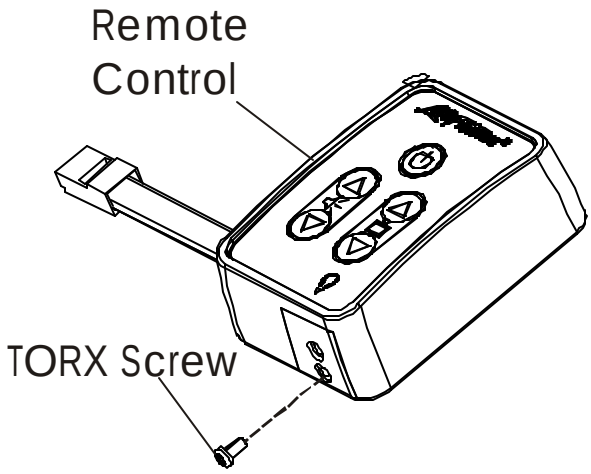
Life Fitness LCD Entertainment System

How To... Replace the Headphone Jack

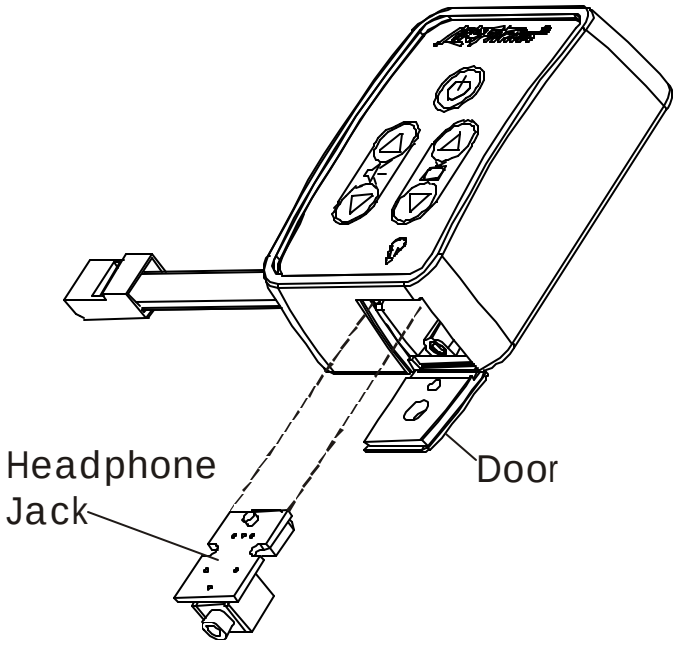
Special Service Tools Required: NONE

Note: The Headphone Jack can be removed without removing the Remote Control from Unit.

1. Remove the TORX Screw from the base of the Remote Control.



2. Swing the Door down which exposes the Headphone Jack.
3. Using a pair of long nose pliers, pull the Headphone Jack out of the Remote Control.
4. Discard the faulty Headphone Jack.
5. Install new Headphone Jack in reverse order.



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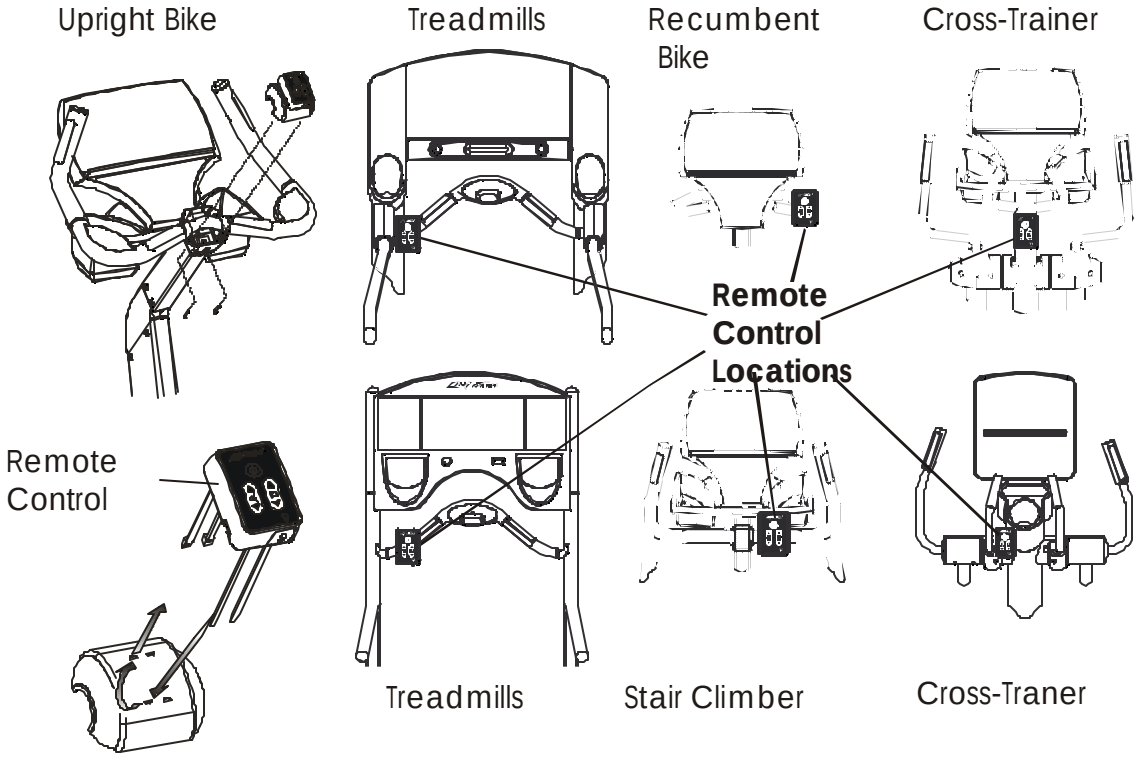
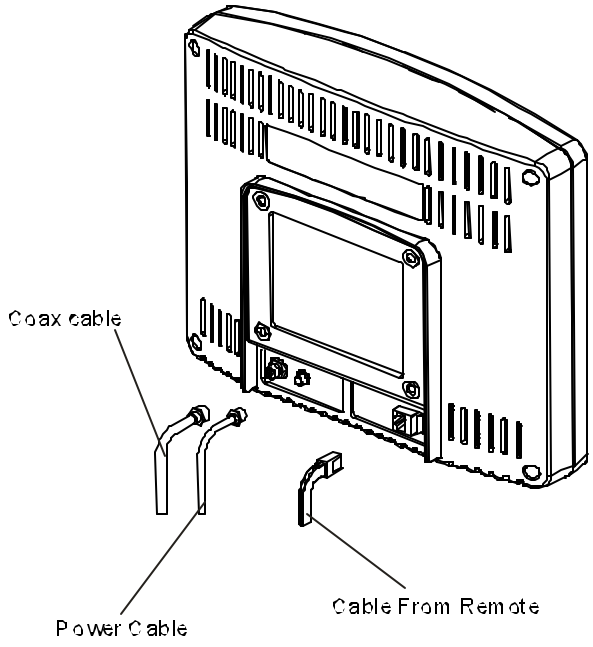
How To... Replace the Remote Control

Special Service Tools Required: NONE

Note: The Remote Control Unit can be removed without removing TV Assembly. Refer to the illustrations above to identify Remote Control Location on each Unit. On Treadmills the remote is mounted between the Life Pulse Sensor and the Cover on the left side of the Handlebar.



1. Cut the Wire Ties securing the Remote Control to the equipment.
2. Remove the Cup Holders.
3. Remove the Console Assembly.
4. Unplug the Cable from the Remote at the back of the TV Console.
5. Secure the Remote Control Assembly with Wire Ties and cut off the excess.
6. Install new Remote at the locations shown above.



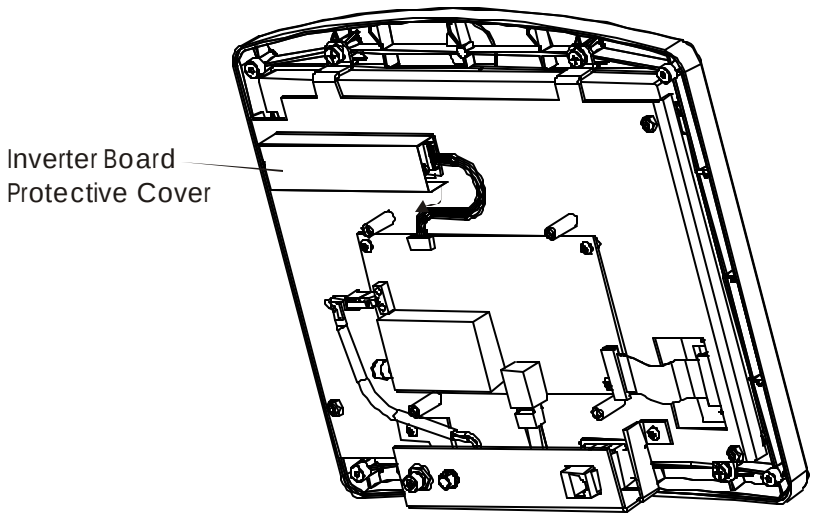
Life Fitness LCD Entertainment System

How To... Replace the Inverter Board

Special Service Tools Required: NONE

CAUTION! Before replacing Circuit Board(s), ground yourself to the machine using an anti-static ground strap.

1. Remove the TV Assembly. See “How To …” in this section.
2. Remove four screws securing the Back Cover of the TV Console, and then separate the two console halves.
3. Lift back the Protective Cover exposing the Inverter Board, and then unplug the three cables.

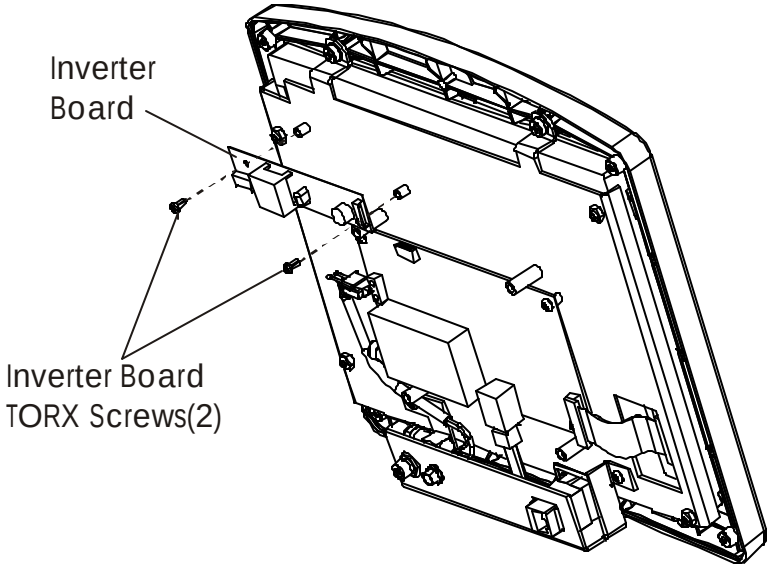


4. Remove two Torx Screws securing the Inverter Board from the PC board.
5. Remove the Inverter Board.

Note: If the protective cover needs replacement, then do so at this time.

6. Install new Inverter Board in reverse order.
7. Check for power……

Note: Make sure to re-install the Inverter Board Protective Cover.



Life Fitness LCD Entertainment System

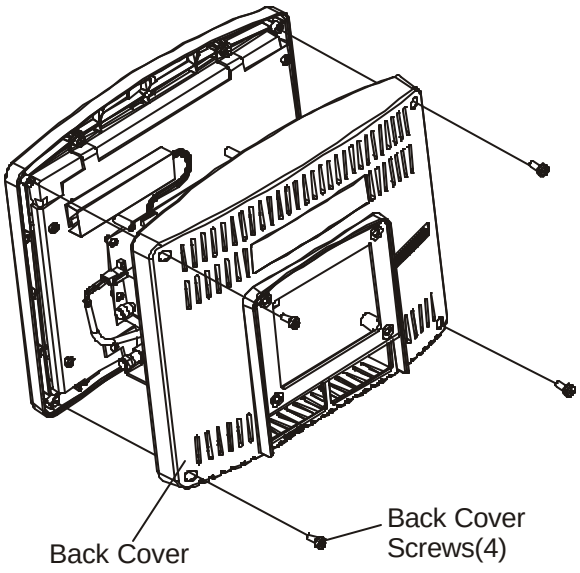
How To... Replace the Main PC Board

Special Service Tools Required: NONE

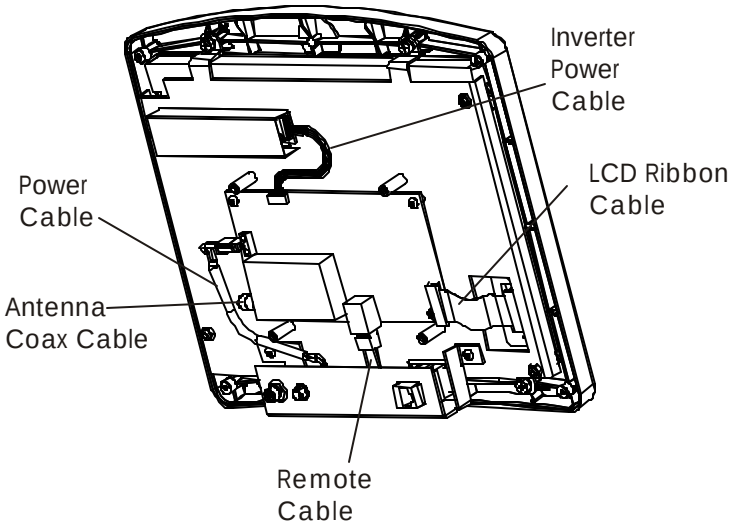
CAUTION! Before replacing Circuit Board(s), ground yourself to the machine using an anti-static ground strap.

1. Remove the TV Assembly. See “How To …” in this section.

2. Remove four screws securing the back of the TV Console, and then separate the two console halves.



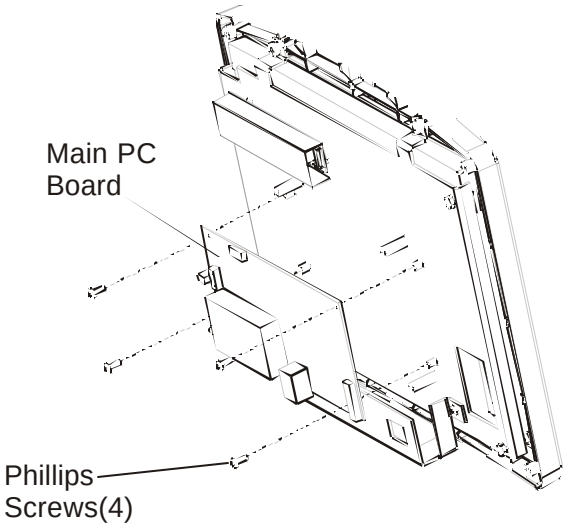
3. Unplug five cables connected to the PC board as follows:
   - Power Cable
   - Antenna Coax Cable
   - Remote Cable
   - Inverter Power Cable
   - LCD Ribbon Cable



4. Remove four screws securing the Main PC Board to the bracket and lift out the Main PC Board.

5. Install new Main PC Board in reverse order.

6. For channel re-programming refer to the Operation Manual.



Life Fitness LCD Entertainment System

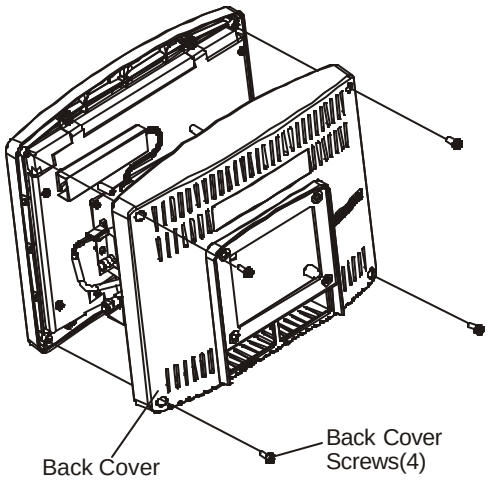
How To... Replace the Connector Bracket

Special Service Tools Required: NONE

CAUTION! THIS PC BOARD CONTAINS STATIC SENSITIVE COMPONENTS. MAKE CERTAIN YOU ARE PROPERLY GROUNDED USING AN ANTI-STATIC STRAP BEFORE REPLACING CIRCUIT BOARD. ALWAYS HANDLE THE CIRCUIT BOARD FROM THE EDGES IF POSSIBLE TO AVOID DAMAGING ELECTRONIC COMPONENTS.

1. Remove the TV Assembly. See “How To …” in this section.

2. Remove four screws securing the back of the TV Console, and then separate the two halves.

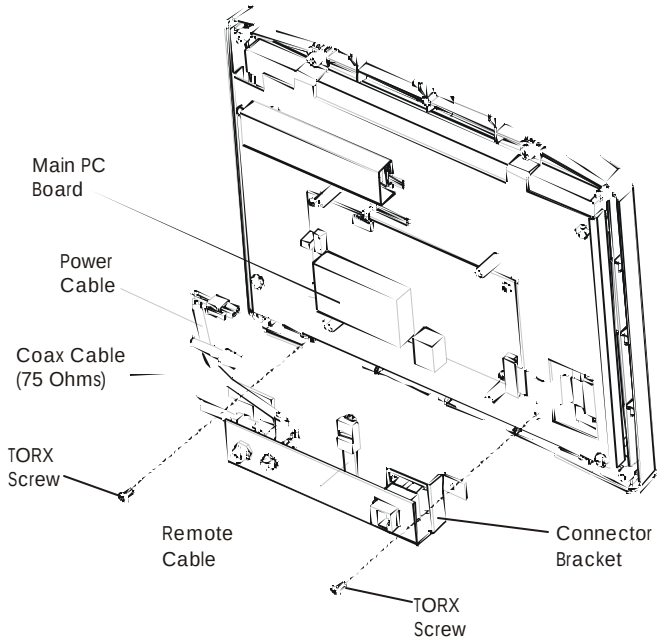


3. Remove the two Torx Screws securing the Connector Bracket.

4. Unplug three cables from the Main PC Board as follows:
   - Power Cable
   - Coax Cable (75 Ohms)
   - Remote Cable

5. Remove the Connector Bracket.

6. Install new Connector Bracket in reverse order.



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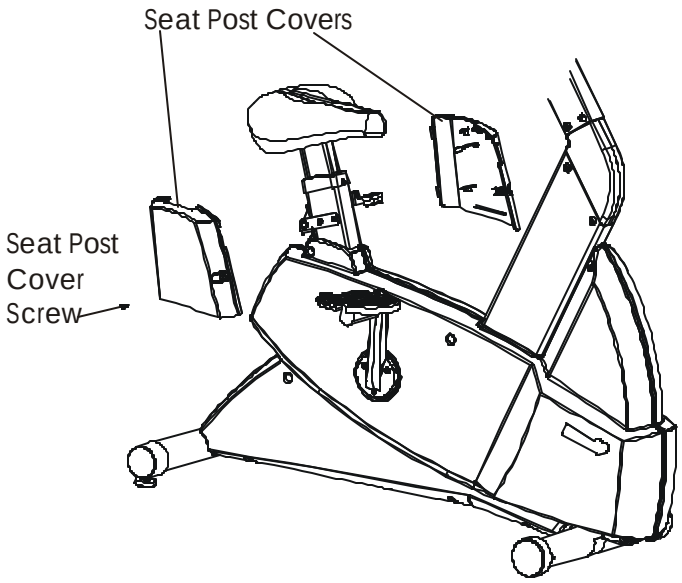
How To... Replace the COAX/Power Cables (Upright Bike)

Special Service Tools Required: NONE

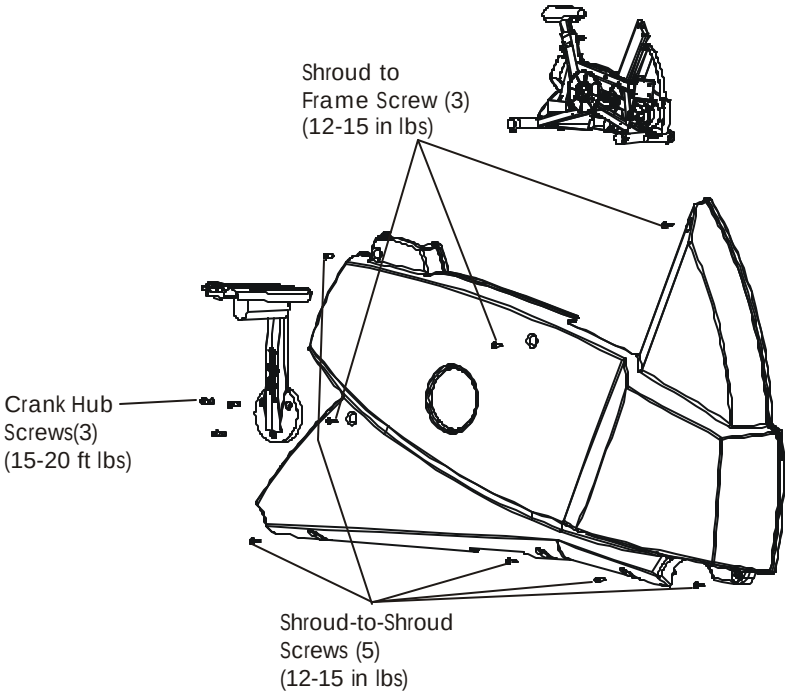
1. Remove the Mounting Screw on the Right Side Seat Cover and then remove the Seat Post Covers.



2. Remove three screws from the Right Crank Arm, and then remove the Right Crank Arm from the Crank Hub with the Pedal attached.

3. To remove the Right Side Shroud, remove eight screws as follows:

- Four screws at the bottom of the Shroud
- One at the top rear of the Shroud. This screw is secured into the Left Side Shroud.
- Three screws, as shown, which secure the Right Shroud to the Frame.

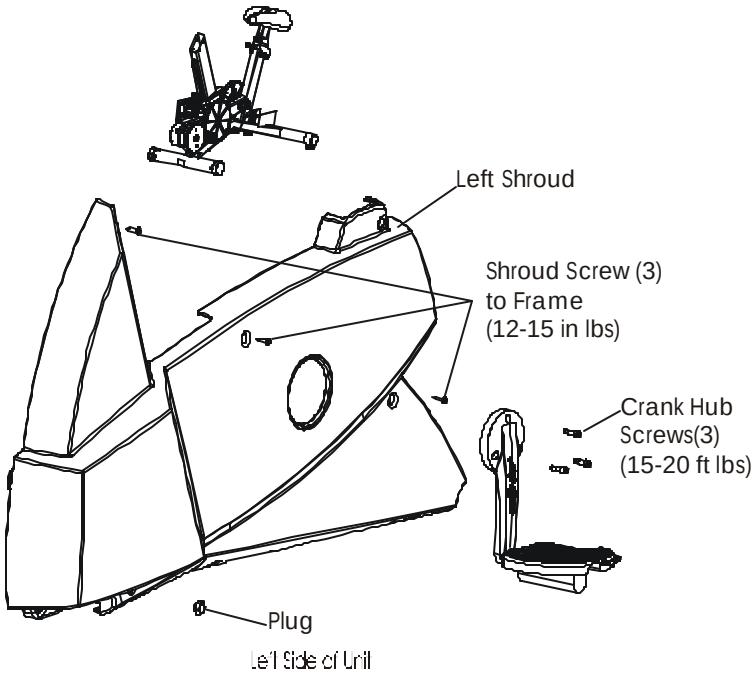


How To... Replace the COAX/Power Cables (Upright Bike) - Continued

Special Service Tools Required: NONE

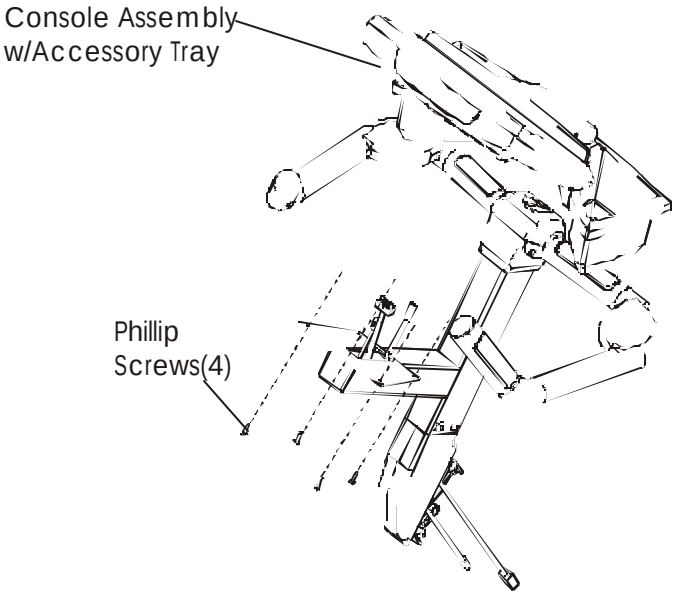
4. Remove three screws from the left crank hub, and then remove the left crank arm from the crank shaft with pedal attached.

5. Remove the three Shroud Screws from the upper half of the Left Side Shroud.



6. Remove four mounting screws from the back of the Console at the Console Support.

7. Lift the Console up just enough to disconnect the Main Wiring, and then remove the Console Assembly with the Accessory Tray.



How To... Replace the COAX/Power Cables (Upright Bike) - Continued

Special Service Tools Required: NONE

8. Unplug the Main Console Cable from the Power Control Board (Connector P2).

9. Remove the Mounting Screws securing the I-Beam Joint to the Console Support Assembly and separate it from the I-Beam.

10. Remove four mounting screws securing the I-Beam Joint to the Frame, and lift the Console Support Assembly and I-Beam out of the Frame.

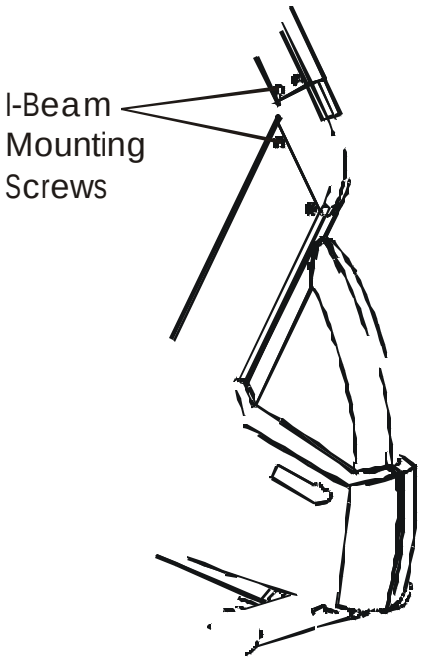
11. Remove the side covers from the I-Beam Joint.

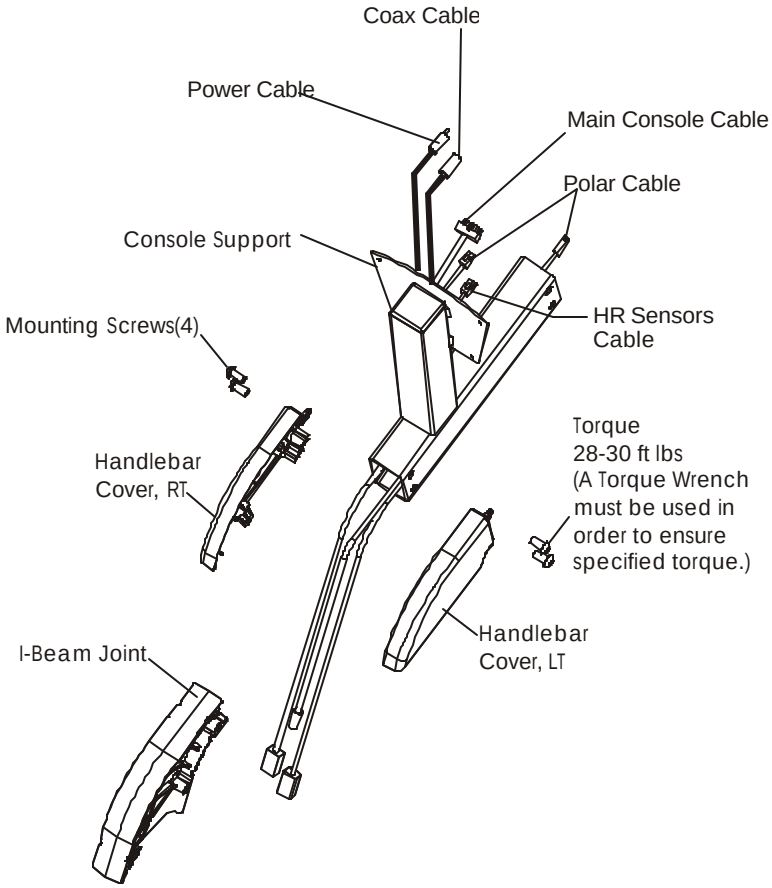
12. If replacing the Power Cable, then cut the Cable Ties securing the Transformer to the Front Stabilizer.

13. Before removing any cables, attach a fish tape to the end of the COAX Cable or Power Cable. Pull the old cable out from the bottom of the Unit. Take off the old cable from the fish tape and attach the new cable. Carefully pull the fish tape up and guide the new cable up until it comes out through the top of the frame.

14. If the Power Supply was replaced, secure with Cable Tie to the Stabilizer.

15. Install parts in reverse order.





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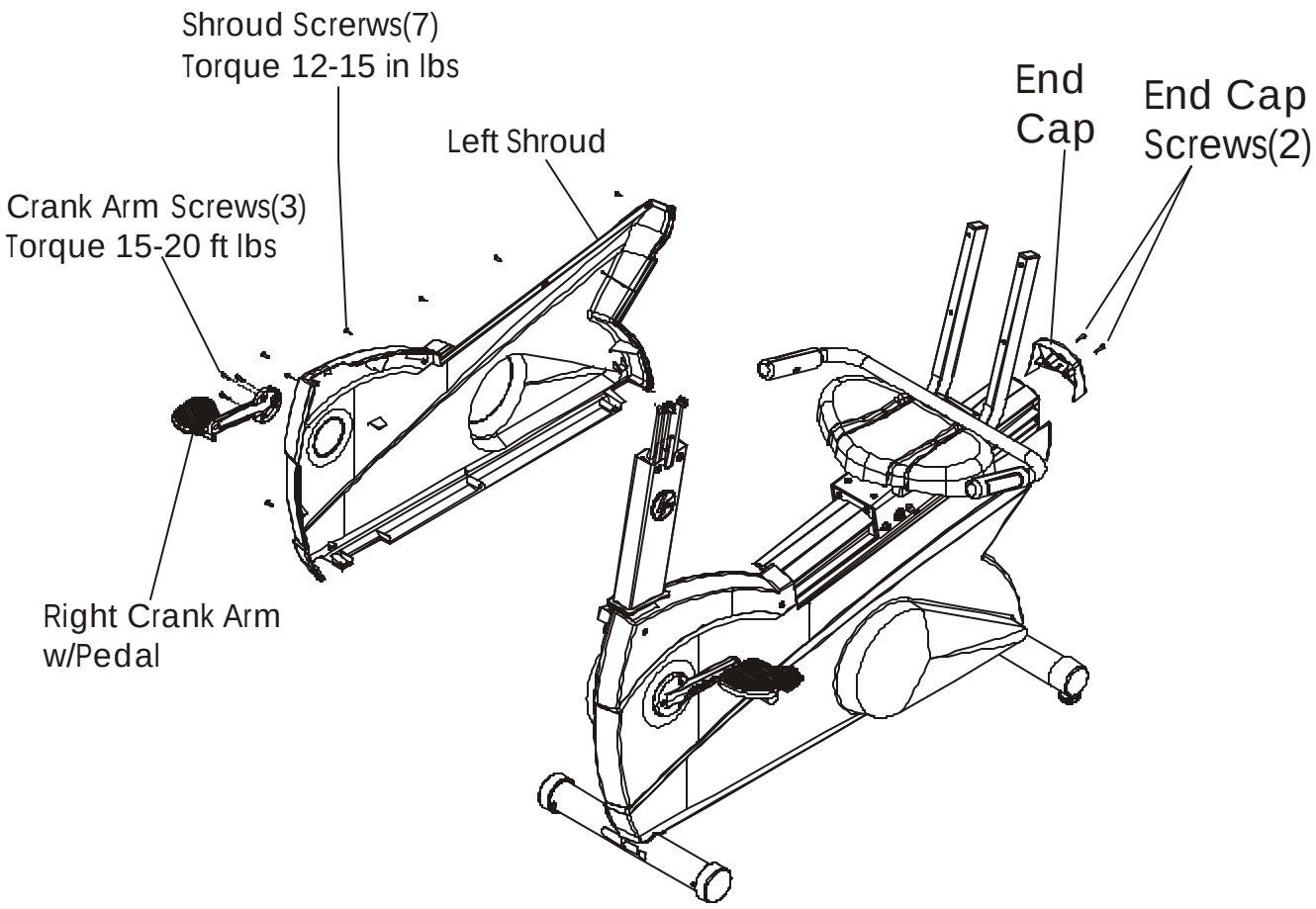
How To... Replace the COAX/Power Cables (Recumbent Bike)

Special Service Tools Required: NONE



1. Remove three screws from the Right Crank Hubs, and then remove the Crank Arms with Pedals attached.
2. Remove two screws from the End Cap at the end of the Frame, which allows access to the left and right side Shroud Screws.
3. Remove the right side Shroud Screws, and then remove the Right Side Shroud.

How To... Replace the COAX/Power Cables (Recumbent Bike) - Continued

Special Service Tools Required: NONE

4. Remove four Mounting Screws from the back of the Console at the Console Support.

5. Lift the Console up just enough to disconnect the 10-pin Main Wiring Connector, and if equipped, the 4-pin Heart Rate Cable.

6. Remove the Console from the Console Support.

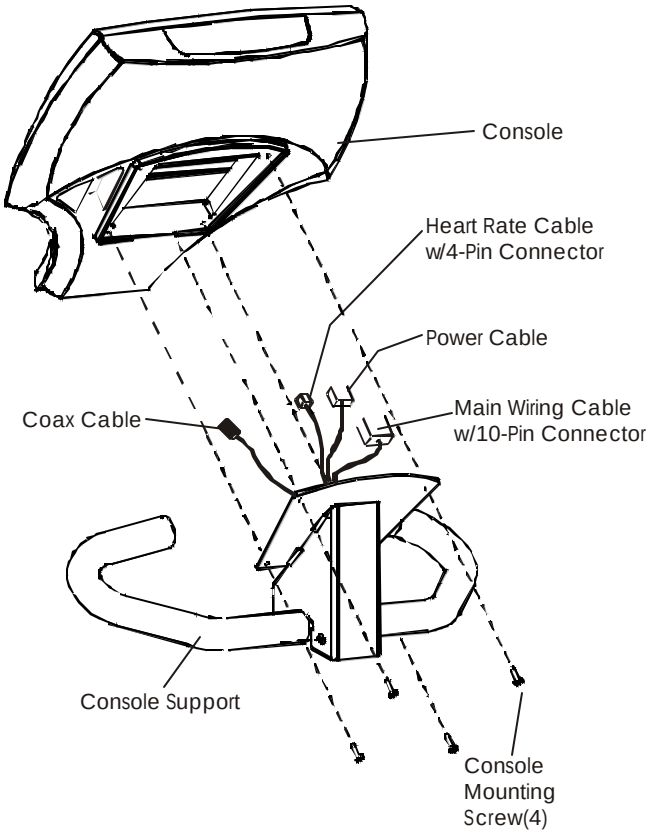
7. Disconnect the COAX Cable or Power Cable from the LCD.

8. Cut the Cable Ties securing the Transformer to the Front Stabilizer.

9. Before removing any cables, attach a fish tape to the end of the COAX Cable or Power Cable. Pull the old cable out from the bottom of the Unit. Take off the old cable from the fish tape and attach the new cable. Carefully pull the fish tape up and guide the new cable up until it comes out through the top of the frame.

10. Secure the Transformer to the Front Right Stabilizer using Cable Tie.

11. Install parts in reverse order.

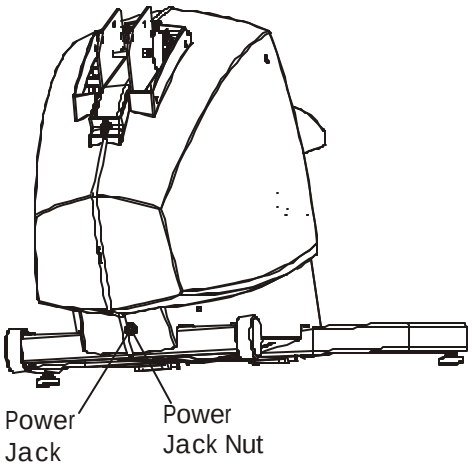


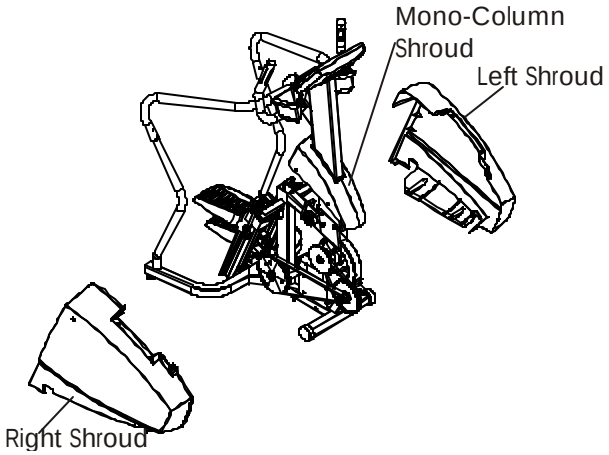
Life Fitness LCD Entertainment System

How To... Replace the COAX/Power Cables (Stepper)

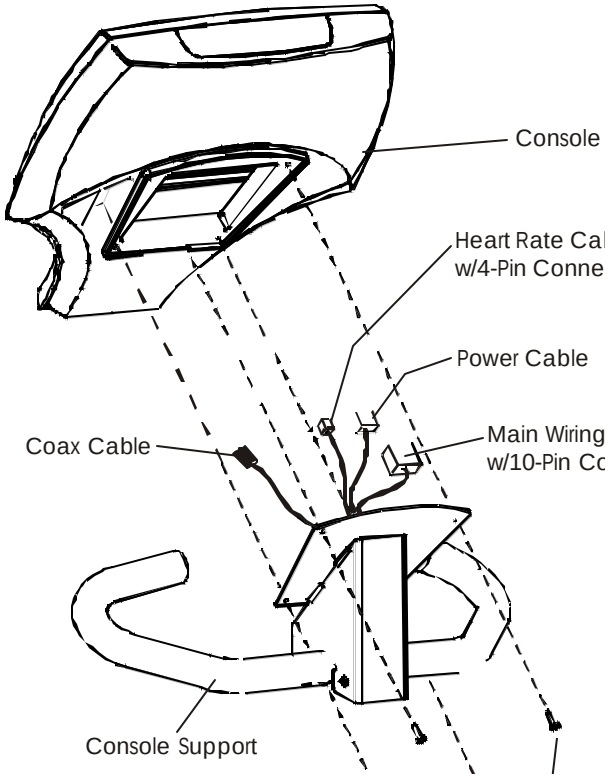
Special Service Tools Required: NONE

1. Remove four screws securing the Mono-Column Shroud.
2. Lift the Mono-Column Shroud up the Mono-Column and secure it up out of the way.
3. Remove five screws from the Right Side Shroud, and then remove the Shroud from the machine.
4. Remove four screws securing the Left Side Shroud. Carefully pull the Shroud back just enough to reach in and disconnect The Power Jack Lead Wire from the PCB Board, and then remove the Left Side Shroud.





5. Remove four mounting screws securing the console and tray assembly to the Console Support.
6. Disconnect the cables at the back of the console.
7. Before removing any cables, attach a fish tape to the end of the COAX Cable or Power Cable. Pull the old cable out from the bottom of the Unit. Take off the old cable from the fish tape and attach the new cable. Carefully pull the fish tape up and guide the new cable up until it comes out through the top of the frame.
8. Reassemble in reverse order.



Life Fitness LCD Entertainment System

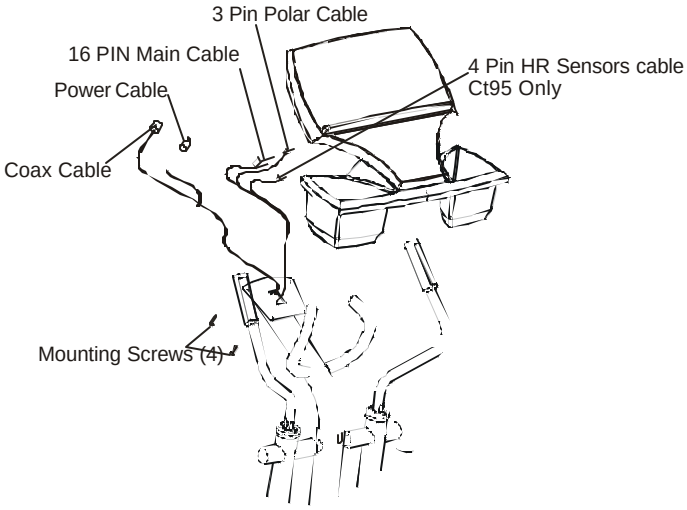
How To... Replace the COAX/Power Cables (Cross-Trainer - Black)

Special Service Tools Required: NONE

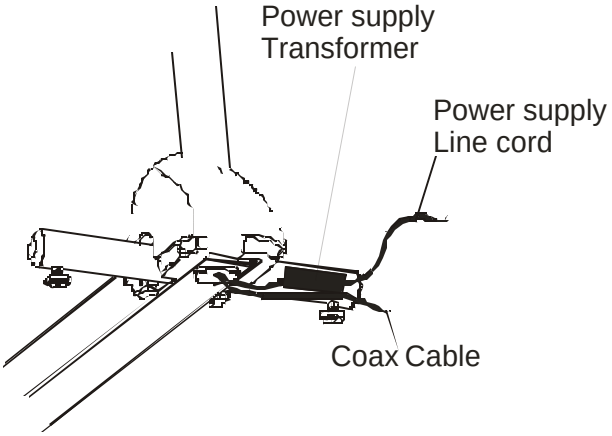
1. Remove the four Mounting Screws from under the Console.

2. Lift the Console up enough to disconnect the 16-pin, 3-pin, and 4-Pin connectors (CT9500), and then place the Console aside.

3. Before removing any cables, attach a fish tape to the end of the COAX Cable or Power Cable. Pull the old cable out from the bottom of the Unit. Take off the old cable from the fish tape and attach the new cable. Carefully pull the fish tape up and guide the new cable up until it comes out through the top of the frame.



4. Reinstall Console in reverse order.

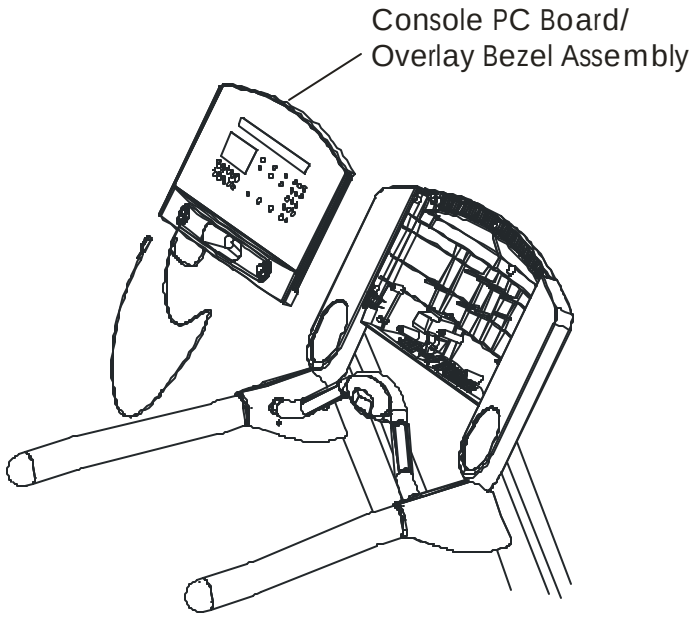


Life Fitness LCD Entertainment System

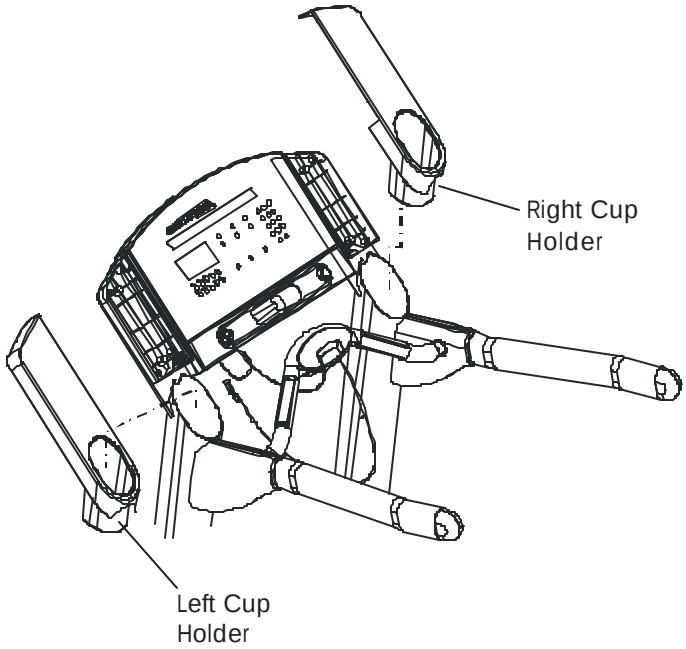
How To... Replace the COAX/Power Cables (Treadmill - Silver)

Special Service Tools Required: NONE

1. Remove eight screws from the back of the Console, and lift the Bezel Assembly just enough to unplug all cables connected at the top of the PCB, then remove the Bezel Assembly.



2. Remove four mounting screws securing each Accessory Tray, and lift out the Accessory Trays.

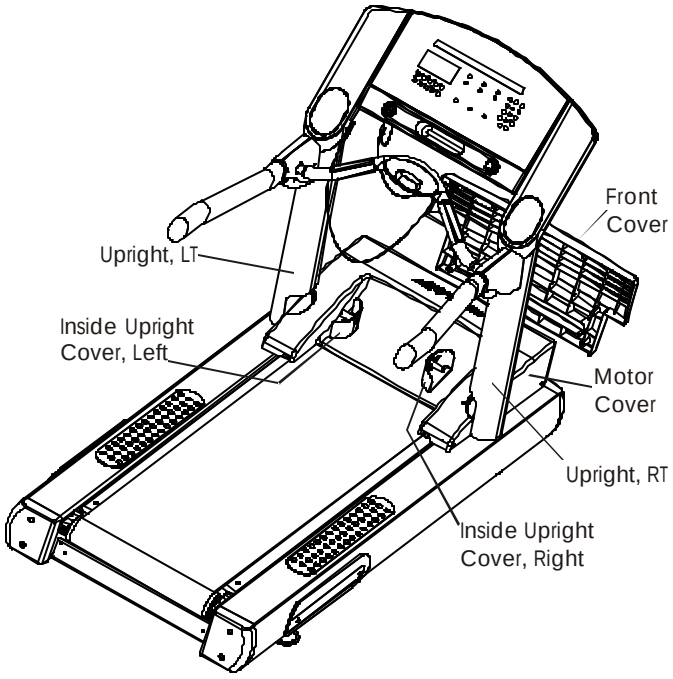


How To... Replace the COAX/Power Cables (Treadmill - Silver) - Continued

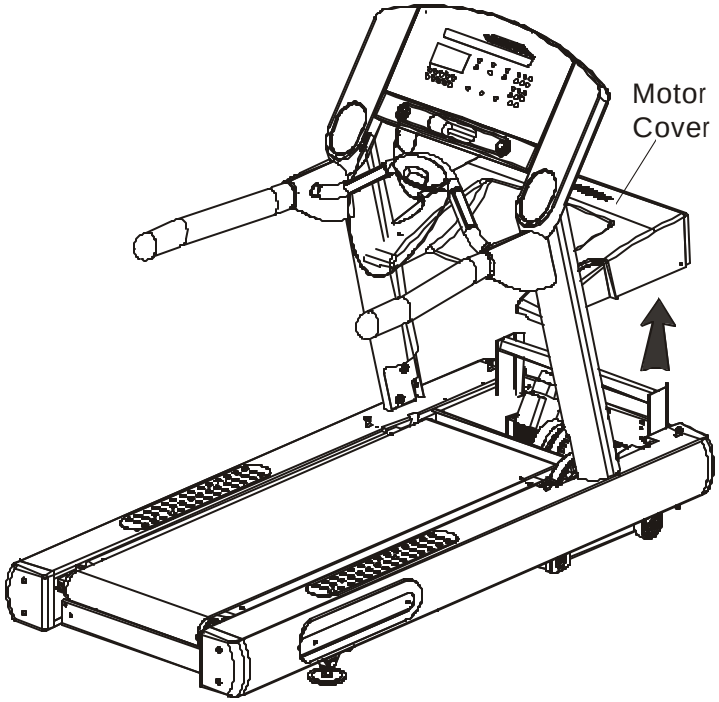
Special Service Tools Required: NONE

3. Remove the left and right inside Upright Covers.

4. Remove four screws from the Front Cover, and then remove the Front Cover from the front of the unit.



5. Remove four Motor Cover screws, and then lift off the Motor Cover from between the Upright Supports.



How To... Replace the COAX/Power Cables (Treadmill - Silver) - Continued

Special Service Tools Required: NONE

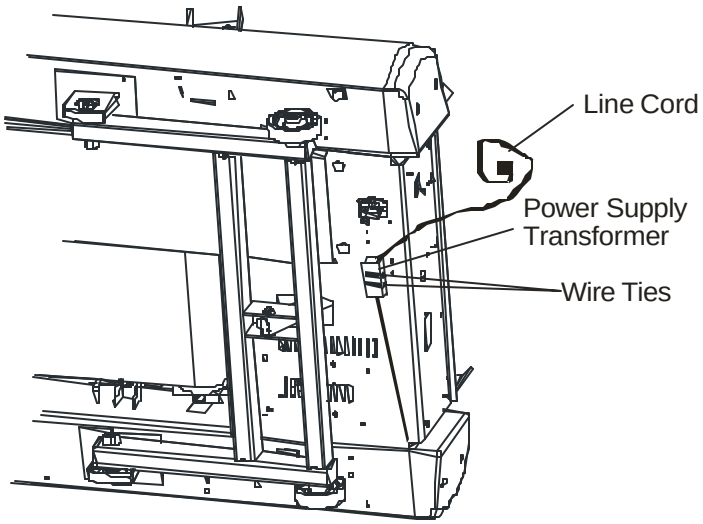
6. Disconnect the COAX Cable or Power Cable from the LCD.

7. Cut the cable Ties securing the Transformer to the Treadmill Frame.

8. Before removing any cables, attach a fish tape to the end of the COAX Cable or Power Cable. Pull the old cable out from the bottom of the Unit. Take off the old cable from the fish tape and attach the new cable. Carefully pull the fish tape up and guide the new cable up until it comes out through the top of the frame.

9. Cable Tie the Transformer to the Fame.

10. Install all parts in reverse order.

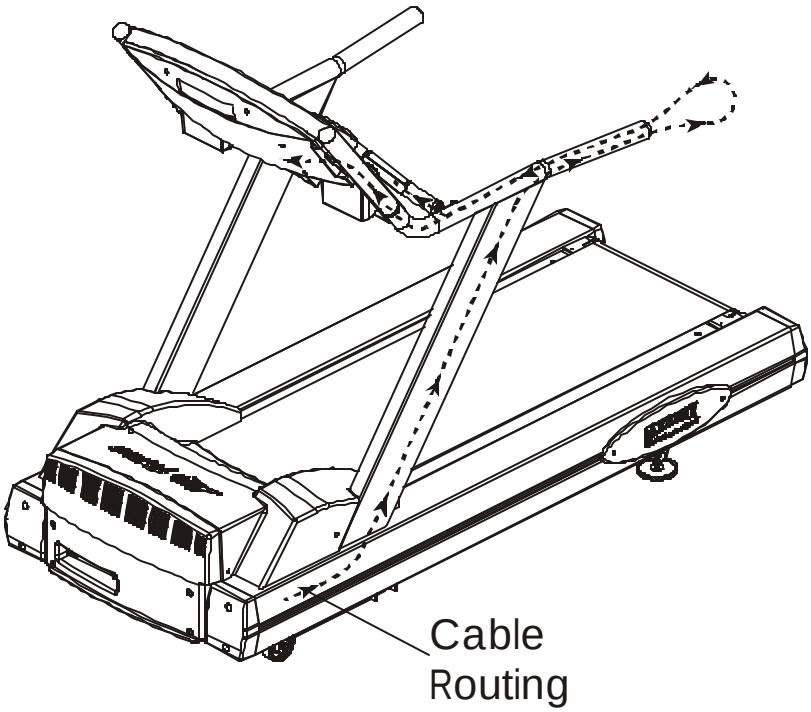


Life Fitness LCD Entertainment System

How To... Replace the COAX/Power Cables (TR91, 95HR, 97HR - Black)

Special Service Tools Required: NONE

1. Turn the unit power OFF at the switch, and then unplug the line cord at the wall outlet.
2. Remove eight screws from the back of the console.
3. Disconnect all cable connectors from the circuit board.
4. Remove six mounting screws securing the display console to the Tube Extensions, and then remove the display console.
5. Remove the left Tube Extension from the cables. Route out the cables from the tube.
6. Remove eight screws from the Handle Bar, and then remove the handle bar.



7. Remove the Motor Cover and disconnect the Main Wiring Harness Connector from the Wax Lift Board.
8. If equipped with a fan on the side frame, remove all cables connected to the Wax Lift Board and to the Motor Controller.
9. Remove four screws holding in the Motor Controller, and then remove it.
10. Remove the two screws securing the Fan Bracket.
11. Remove three mounting bolts at the base of the left handrail support.
12. Lift off the left handrail while routing out the cable from the frame.
13. Remove the Left Handle Bar End Cap, and then pull out the Main Wiring Harness and discard.
14. Install the new Coax and Power Cable in reverse order. With the left handle bar end cap removed, route the cable out the end of the handle bar, then re-route back out to the top of the handle bar.

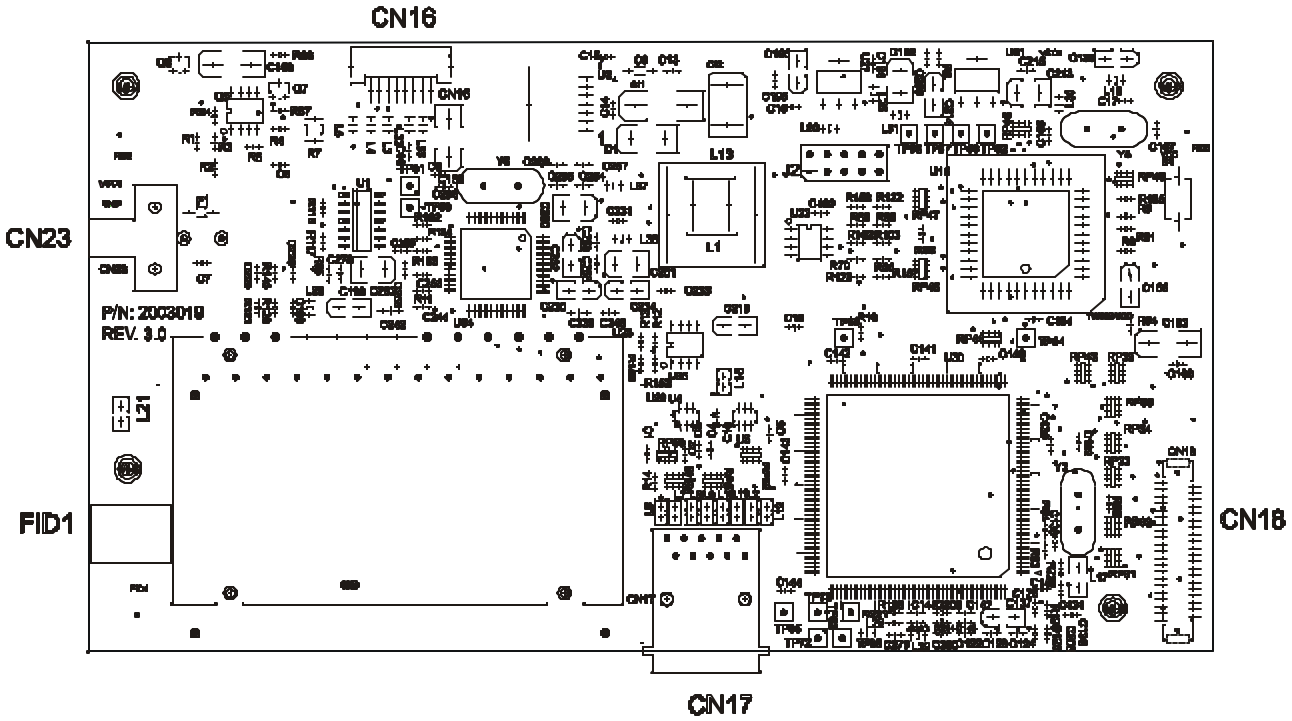
NOTES

SECTION III

ELECTRONIC OVERVIEW AND WIRING BLOCK DIAGRAM

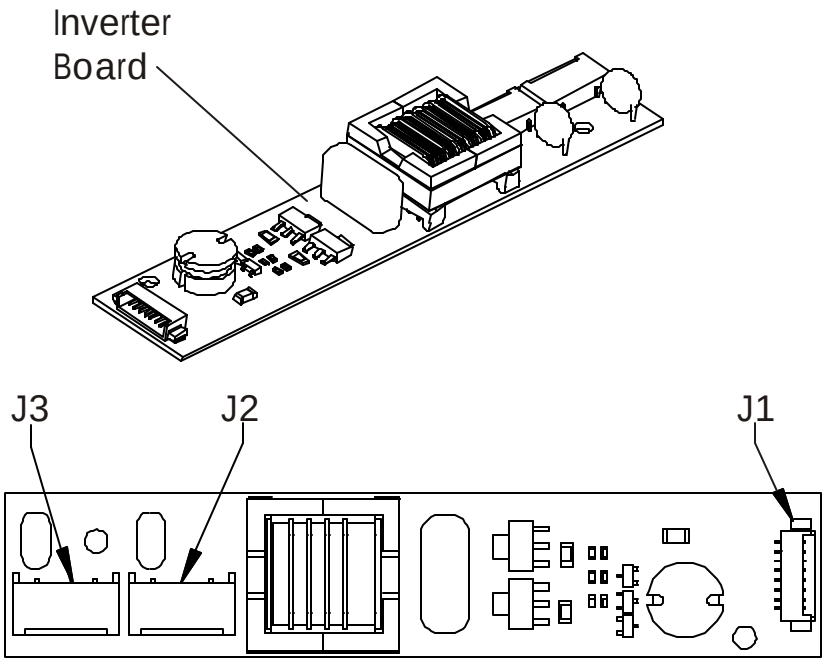
NOTES

Main Power Control Board



CONNECTOR	PIN	FUNCTION	VOLTAGE
CN16 – Inverter Power	1	Ground	Ground
	2	Ground	Ground
	3	Vin	12 Volts DC
	4	Vin	12 Volts DC
	5	Enable	0-5 Volts DC
	6	N/C	N/C
	7	N/C	N/C
	8	N/C	N/C
CN17 – Remote Control and Headphone Output	1	-	-
	2	-	-
	3	-	-
	4	-	-
	5	-	-
	6	-	-
	7	-	-
	8	-	-
	9	-	-
	10	-	-
CN18	1-41	LCD Ribbon Cable	Communication to LCD Screen
CN23 Main Power Input	1	Vin	12 Volts DC
	2	Ground	Ground
FID1 Antenna Input	1	-	-
	2	Ground	Ground

Inverter Board Pin Layout



CONNECTOR	PIN	FUNCTION	VOLTAGE
J1	1	Vin	12 Volts DC
	2	Vin	12 Volts DC
	3	Ground	Ground
	4	Ground	Ground
	5	Enable	0-5 Volts DC
	6	N/C	N/C
	7	N/C	N/C
	8	N/C	N/C
J2	1	AC-out	1500 VAC Unload 550 VAC Loaded
	2	AC-com	-
J3	1	AC-out	1500 VAC Unload 550 VAC Loaded
	2	AC-com	-

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M051-00K32-A036 – 02/04